tain cases he has found a combination of morphia and extract of hyoscyamus useful: in others, belladonna, or its alkaloid atropia. Chloroform and chloral have both been given for the relief of tenesmus.

Very little importance is attached by the editor to the use of the mineral or vegetable astringents. Indeed, he does not make it very clear to us what remedies he would employ in the treatment of the disease after the violence of the symptoms had been somewhat relieved by the action of a cathartic, and before convalescence had been established. Tannic and gallic acid, alum, sulphate of copper, nitrate of silver, the preparations of zinc, acetate of lead, the astringent salts of iron, the mineral acids, the resins and balsams, oil of turpentine, and camphor, are all condemned or dismissed from consideration with scant praise. Of bismuth he, however, speaks approvingly. It is recommended especially in the treatment of painless diarrhœa after the use of evacuants and of chronic fluxes.

During convalescence the tonic which was found most useful was undoubtedly quinia, especially in cases in which there was reason to suspect a malarial complication. During the acute stage of dysentery it was sometimes given with the happiest results for its antipyretic effects. Iron was sometimes administered in combination with it. The editor speaks also approvingly of nux vomica and its alkaloid, strychnia, and of some of the other vegetable tonics. His experience does not enable him to coincide in the favourable opinion many recent authors have expressed of astringent injections, and it has led him to condemn injections of iodine. Warm applications to the abdomen and rubefacients may sometimes be of service, but he counsels us against the employment of blisters, which may sometimes in scorbutic cases be followed by sloughing of the integuments.

It only remains for us to speak of the manner in which Dr. Woodward has executed his task. It is pleasant to be able to say that it is possible to do this only in terms of praise. We regard the volume as a valuable contribution to the literature of the fluxes; in fact, the most valuable with which we are acquainted. As an evidence of the zeal, industry, and intelligence of its editor, the work is one of which his countrymen may justly feel proud. The book, in addition to numerous diagrams, contains as illustrations a large number of very handsome chromolithographic and photograghic plates; the former, from the skilful pencil of Mr. Hermann Faber, representing the microscopic and macroscopic appearances of the lesions in the intestines produced by diarrhœa and dysentery.

J. H. H.

ART. XVIII.—*A Treatise on Hygiene and Public Health.* Edited by ALBERT H. BUCK, M.D., American Editor of Ziemssen's Cyclopædia of the Practice of Medicine, etc. 2 vols. 8vo., pp. viii. 792, vii. 657. New York: William Wood & Co., 1879.

THE appearance of these two handsomely printed and profusely illustrated volumes, comprising more than fourteen hundred pages, is gratifying evidence of a firm faith that the wonderful growth of popular interest in hygiene and its allied subjects, during the last few years, has stimulated the great body of our medical brethren to a far more profound and extended study of sanitary science. Already Hygiene is regularly taught in seventeen out of the twenty German universities, many of the English colleges give systematic instruction in the subject, and the time seems not far distant when the authorities of our own leading medical schools will realize *practically* as well as theoretically that the medicine of the future will be preventive medicine.

A curious enigma is presented to us at the outset in the label of this work—"Hygiene and Public Health—Buck," since faithful search through its two bulky volumes fails to demonstrate any reason for this implied authorship, except a brief prefatory note of thirteen lines in which Dr. Buck appears as spokesman for the publishers, and a footnote on page 393, of some thirty lines, in reference to his own specialty of diseases of the ear, with minute directions for blowing the nose after bathing. The editor's genius and familiarity with sanitary science are not evident in any part of the work, so that the problem of why it is entitled Buck's Hygiene is one difficult to solve.

The "Introduction" is written by Dr. J. S. Billings, U. S. A., who here criticizes the usual definitions of hygiene as being universally unsatisfactory; that of Prof. Parkes, which is often quoted, viz., that it is "the art of preserving health," being defective in that "it aims to increase and improve as well as to preserve, and the word health is too vague to be of much value in this connection."

> "In its broadest sense the study of hygiene includes the examination of the conditions which affect the generation, development, growth, and decay of individuals, of nations, and of races, being on its scientific side coextensive with biology in its broadest sense, including sociology, rather than with physiology merely, as some writers state."

With his usual conservatism, Dr. Billings puts forth a timely warning against the growing tendency to exaggerate the possibilities of prolonging life and preventing disease, a caution of infinite importance, because at the present day, when the attention of our community is so widely awakened to the vital importance of sanitary precautions of all kinds, any misrepresentation of their actual value will be very apt to lead to popular suspicion and distrust, which most inevitably checks the progress of that correct public opinion upon hygienic subjects which it is the urgent duty of every philanthropic sanitarian to foster and extend.

Making all allowance for this tendency to optimism, Dr. Billings asserts:—

> "The total annual loss of life in this country from causes well known to be preventable is certainly over 100,000 annually. . . . In addition to these unnecessary deaths there are probably one hundred and fifty thousand persons constantly sick in the United States from causes which we have good reason to think are preventable, and we may accept as a basis of calculation that the productive efficiency of the average life in this country falls short of the normal amount by at least thirty per cent."

Under the title of "Causes of Disease" our author enumerates several customary classifications, and indicates his preference for thus dividing them into, 1st, hereditary; 2d, physical or chemical; 3d, organized or vital; 4th, mental or emotional causes. Of these, the third class, as being those most important in public hygiene, receives the chief share of his attention.

Under this head Dr. Billings reviews at some length the so-called germ theory of disease, in regard to which his opinions are of course entitled to profound consideration. He advocates the use of the word "microdemes" (*i. e.*, little living bodies) as a comprehensive term to include the "microzymes" of Burdon Sanderson, the "micrococcus" and "micro-bacteria" of Billroth, the "schizomycetes" of De Bary, the "spaltpilze" of Naegeli and of Cohn, the spores of numerous fungi, etc., many of which at any rate take an active part in producing or promoting the decomposition of organic matter.

Dr. Billings accepts splenic fever (*charbon*, malignant pustule), with its analogue the "infectious pneumo-enteritis" of Prof. Klein, as being caused by the rod-like organisms of Bacillus anthracis; relapsing fever as almost certainly produced by the Spirochaete obermeieri of Cohn; and diphtheria as perhaps caused by another form of Bacillus; but denies that there is any evidence to prove that the microdemes in the contagium of smallpox, scarlatina, and measles can be classed with the schizomycetes or other forms of microphytes. To these latter complaints he considers the explanation afforded by the bioplast or graft theory is especially applicable.

The third important question discussed in this introduction is the jurisprudence of hygiene, in which the difficult problem of how to exercise that despotic power which is absolutely necessary to the efficiency of sanitary measures, without infringing upon the personal freedom and popular sovereignty of our republican institutions, is discussed. Under our system of government the power to establish hygienic regulations of all kinds, such as those compelling the isolation of persons sick with contagious diseases, the abatement of nuisances, the collection of vital statistics, etc., is derived partly from the "right of eminent domain," but chiefly from the "police power," which is defined to be that vested in the Legislature by the Constitution to make, ordain, and establish all manner of wholesome and reasonable laws, statutes, and ordinances, either with penalties or without, not repugnant to the Constitution, as they shall judge to be for the good and welfare of the Commonwealth and of the subjects of the same. This section is replete with valuable suggestions and profound research, being eminently worthy of careful study by every American sanitarian.

The second topic considered is that of "Infant Hygiene," justly selected as preliminary to an account of the sanitary management required by fully-developed man, and is treated of by Prof. Jacobi, of New York. It constitutes the initial chapter of Part I., which is devoted to individual hygiene. In it are ably discussed the care of the respiration and circulation of the newly born; infant feeding;, selection of a wet-nurse; animal and vegetable substitutes for breast milk; dietetic causes of constipation, and so forth. With these appropriate disquisitions, however, are associated dissertations upon the anatomy and changes of the umbilical cord; the treatment of the normal and pathological conditions of the cord; upon lancing the gums; upon intestinal digestion, etc., which appear out of place in a treatise on hygiene. Indeed the author states that the material employed in this article had already been largely used as part of Gerhardt's "Handbook of Children's Diseases."

The third section, upon "Food and Drink," by Prof. James Tyson, of the University of Pennsylvania, is marked by the accuracy and painstaking research which characterize all his writings. Dr. Tyson's special studies have, however (perchance quite unconsciously to himself), rendered many portions of this essay better suited to a system of physiology or one of pathology than to a work on hygiene and public health.

Prof. Wm. Ripley Nichols, of the Institute of Technology, Boston, contributes the section, upon "Drinking Water and Public Water Supplies," which contains much valuable information respecting the sources, modes of transportation, purification, etc., of our stores of water. At the same time his article affords a lamentable illustration of how unwise non-medical observers are when they attempt to decide upon purely medical questions. Probably no one fact in sanitary science is more certain, or more important in all its bearings, than that the poisons of some very fatal diseases (typhoid fever and cholera for example) are disseminated by means of drinking water. Neglect of proper precautions against sewage contamination doubtless costs thousands of lives and tens of thousands of cases of lingering illness in the United States alone; nevertheless, we find Dr. Nichols sanctioning carelessness in this respect by the following tepid caution, "With all due allowance for imperfect observation and for prejudiced observers, it seems that at present the weight of evidence and of authority favours the idea that the drinking water may become the cause of disease, and in drinking a polluted water one always runs more or less risk." Such lukewarmness upon a fundamental doctrine enfeebles the teaching of his whole essay, for why should so much money, time, and trouble be expended in procuring pure water if hygienic authorities only "favour the idea" that polluted drinking fluids are the causes of disease?

Perhaps, we are not yet prepared to adopt the recent dictum of an English engineer, that "for every death from typhoid fever *somebody* ought to be hung;" but the year in which it does become law will, we fear, behold a terrible mortality among disciples of Prof. Nichols.

Dr. A. Brayton Ball, of New York City, gives in the next chapter, upon "Physical Exercise," a good compilation from the works of Parkes, E. Smith, Maclaren, Schaible, and others, in regard to muscular movement and muscular training; and a useful and instructive paper upon "The Care of the Person," by Dr. A. Van Harlingen, of Philadelphia, concludes the section of Individual Hygiene.

Under the head of "Habitations," comprising Part II., we find an original, able, and well-written article upon "Soil and Water" from the pen of Dr. W. H. Ford, whose ample experience as President of the Philadelphia Board of Health renders his opinions upon practical matters in this department of immense value. It is followed by an excellent essay upon "The Atmosphere," by Dr. D. F. Lincoln, of Boston, Mass.; and the final chapter of volume first by Dr. Francis H. Brown, of Boston, treats of the "General Principles of Hospital Construction," and merits the same praise.

The second volume opens with an essay upon the "Hygiene of Occupation," by Roger S. Tracy, M.D., of New York, which of all the sections displays the most glaring discrepancy between the *promise* that this work should be "written with special reference to the different climates, conditions of soil, habitations, modes of life, and laws of the United States," and its actual performance. So thoroughly exotic in its character is this article that we think it will be found almost indispensable to any American or English hygienist who, without a knowledge of the German tongue, may undertake to practise sanitary science on the Continent. For example, on a single page (p. 44) one will find that the fragments of bristles inhaled by brushmakers cause great irritation of the bronchi. "As will be seen by the table annexed, Hirt gives the very high percentage of 49.1 deaths by phthisis among brushmakers." A dozen lines further on they are told that "Hirt refers to English and Gussenbauer as describing a peculiar affection of the bones in buttonmakers exposed to mother-of-pearl dust," but at the end of the paragraph we discover that "Hirt adds that he has never seen a case himself, although he made inquiries about it in many button factories." Two lines below again, the inquiring reader learns "According to Hirt the work [of making feather ornaments] can be carried on by any one person for only three years at the farthest without great impairment of the health," and at the end of this page we are told that "The female spinners in woollen mills are said by Hirt to be pale and thin, weary looking, lazy, and drowsy." Facts, theories, and conclusions are thus borrowed from Prof. Hirt in the most liberal manner, and yet in his bibliography Dr. Tracy unkindly places Hirt's "Die Krankheiten der Arbiter" at the very bottom of his list of general works.

The section on the "Hygiene of Camps," by Charles Smart, M.B., Asst. Surgeon U. S. Army, although written by a foreigner, is distinctively American, and as such goes far to redeem the promise of the "editor's note." Indeed this chapter, with the similarly able and elaborate one upon "Hygiene of Naval and Merchant Marine" from the scholarly pen of Dr. Thomas J. Turner, Medical Director U. S. Navy, renders the volume almost indispensable to medical officers in the United States service. Nowhere else can so full, intelligent, and instructive a commentary upon the government regulations now in force in regard to the health of our sailors and soldiers be obtained.

Short articles upon the "Hygiene of Coal and Metal Mines" are followed by essays upon "Infant Mortality," and "Vital Statistics," by Thomas B. Curtis, M.D., of Boston. Under the former of these titles a certain amount of repetition of facts and conclusions previously mentioned in Prof. Jacobi's essay upon Infant Hygiene is observable, but will doubtless be pardoned in view of the importance of the subject. Dr. Curtis's paper upon Vital Statistics, without displaying any marked originality, furnishes a lucid exposition of the principles and their application, which constitute this foundation of all true sanitary science. Among other abundant quotations we meet of course with the well-known and picturesque description of the march of an English generation through life (p. 330) drawn up by Dr. Farr for the Registrar General's Report of Great Britain.

Mr. Stephen P. Sharples, of Boston, furnishes the next essay upon the "Adulteration of Food," which contains a good *resumé* of most of the sophistications of articles of diet, from which, however, the traditional nutmeg seems to have been unaccountably omitted. The detection of oleomargarine in butter is stated to be difficult, and chief reliance is placed upon the determination of the amount of insoluble fatty acids in a suspected sample; the process for ascertaining these is, however, imperfectly described. In detecting the adulteration of milk, it is judiciously advised to compare the results from the four different methods of determining, first, the total solids; second, the non-fatty solids; third, the sugar; and fourth, the specific gravity.

Dr. Roger S. Tracy's second article, which is upon "Public Nuisances," proves much more appropriate to the proposed scope of the work than his essay upon "Hygiene of Occupation," previously mentioned. This section, unlike the other, appears to have been written after a fair amount of personal observation and consideration in regard to its subject matter, comparisons and illustrations from European authorities occupying a subordinate position, instead of constituting both warp and woof of the fabric. Nuisances arising from offensive trades, such as keeping of animals, killing of animals, storage, and handling of animal, vegetable, and mineral matters; those from carpet-cleaning, *street music*, etc.; those from chemical, and other like processes; those from human and animal remains, and excreta; nuisances on account of infectiousness (under which are curiously grouped "cemeteries, prostitutes, and diseased animals"), and those on account of noise, smoke, etc., are, with their dangers and their remedies, more or less satisfactorily described.

Under the head of *noise* as a public nuisance, mention is made of church bells and chimes, but the subject is passed over without even a hint that this form of nuisance has ever been the subject of judicial decision. In this connection reference should have been made to the recent suit to restrain the ringing of the chimes of St. Mark's Church in Philadelphia. This case is eminently worthy of mention, not only because it is the first and only case of the kind judicially decided in this country, but also because it is a practical illustration of the precious legal support we may hope for in applying that broad general principle contained in the maxim, *sic utere tuo, ut alienum non lædas*, justly laid down by Dr. Billings, on p. 38 of vol. i., as a chief foundation of sanitary jurisprudence.

From a careful review of the elaborate testimony presented in the St. Mark's case, the Court found "that from the level at which the bells of St. Mark's are hung, and from their proximity to the surrounding buildings, and it may be from other circumstances which are not accurately known or determined, they cannot be chimed or rung without causing an annoyance to the dwellers in the neighborhood, which, in the case of some of them, amounts to a serious injury, and should consequently be abated by an injunction." The case was appealed to the Supreme Court, and the decree was affirmed with a slight modification, which was in accordance with a recommendation contained in the opinion of the lower Court, by which the bells are allowed to be chimed for five minutes on Sundays, beginning thirty minutes before the late morning, the afternoon, and early evening services, and the smallest bell to be tolled for the five minutes immediately preceding these services.

In establishing the law of nuisance from noise, this case has great importance, as has also a more recent English case, likewise unnoticed by Dr. Tracy, in which the defendant, a confectioner, had fixed in the brickwork of his rear wall two large mortars, in which were worked heavy iron pestles. This wall also formed the boundary wall of the garden behind the plaintiff's house. These pestles and mortars had been in constant use for upwards of twenty years. The plaintiff, a well-known London physician, having lately built out a consulting-room abutting on the boundary wall of his garden, found the noise and vibration in the room caused by the use of the pestles so great, that he brought this action to restrain the nuisance. The Master of the Rolls held that the easement or right claimed by the defendant was not one which could be acquired under the statute, or by prescription, and granted an injunction. The defendant appealed, but their Lordships dismissed the appeal with costs. (*Medical News*, Oct. 1879, p. 159.)

The long and varied experience of Prof. S. Oakley Vanderpoel, of New York City, worthily bears fruit in the next article upon "Sea-port Quarantine," which should be carefully perused and pondered by every sanitarian. As remarked by our author, "we should bring to the consideration of the subjects connected with quarantine the same principles of action which govern one in the daily affairs of life; determine, first, every possible circumstance connected with the incubation and mode of propagation of an epidemic, and contravene it by measures specially adapted to the special form of disease." Dr. Vanderpoel recognizes smallpox, ship-fever, yellow fever, and cholera, as being subject to control by quarantine regulations, and gives minute practical directions for inspection, disinfection of persons and goods, and subsequent purification of vessels, etc., which we believe, if fully and generally carried out, would enable communities to protect themselves against incursions of these diseases, with the same kind of certainty with which we, as individuals, may escape being crushed, by stepping aside from the track of a locomotive, or may avoid becoming infected with syphilis, by abstaining from all contact with a syphilitic sore.

The paper on "Inland Quarantine," by S. S. Herrick, M.D., Secretary of the Louisiana State Board of Health, is chiefly made up of facts and deductions relating to the yellow fever epidemic of 1878. Its author wisely advocates extension of the principles of sea-port quarantine to inland intercourse, and makes numerous valuable suggestions towards carrying out this desirable object.

The remainder of the volume is taken up with short articles on the "Hygiene of Smallpox and other Contagious Diseases," "Disinfectants," "Village Sanitary Associations," and "School Hygiene." J. G. R.

ART. XIX.—*Chirurgie Oculaire.* Par L. DE WECKER. Leçons recueillies et rédigées par le Dr. Masselon. pp. 419. Paris, 1879.
Surgery of the Eye. By L. DE WECKER.

THIS volume is intended as a companion to the *Therapeutique Oculaire* published in 1878, and the two are designed to form a complete course of clinical lectures on the medical and surgical treatment of all diseases to which the eye is liable.

The work before us is worthy of attention and study, because it records the results of operative treatment in eye diseases by an industrious labourer through a long and busy career. And not only so, but, in a certain measure, it may be said to represent the progress of this branch of surgery during the last twenty years. De Wecker is what in business affairs is called an enterprising man. He is fertile of new ideas, and modifications of old ones, and is quick to seize upon the inventions and discoveries of others. He seems never satisfied to stand still; "excelsior" is his motto. No new method of treatment is brought forward by others or himself, but he seeks to improve it. It is no matter for wonder that he does not always succeed, but both his successes and his failures are of value to his contemporaries and those that come after him. They go to make up the history of the surgery of the generation, and should be faithfully recorded. To point out where he appears to have succeeded, and where he seems to have failed, and to give as nearly as possible the commonly accepted views on some of the principal points in ophthalmic surgery is the object of the present review.